Contents

Preface v

Acknowledgements vi

Involvement of endogenous dopamine in control of renal function
C. Bell 1

The intestinal mucosa as a source of dopamine
A.M. Bertorello, M.A. Vieira-Coelho, A.C. Eklöf, Y. Finkel and P.Soares-da-Silva 11

Sequential involvement of monoamine oxidase and catechol-O-methyl-transferase in the metabolism of newly-formed dopamine in rat renal tissues
M.H. Fernandes and P. Soares-da-Silva 21

Regulation of transcellular transport by dopamine production in the proximal tubule
A.D. Baines, P. Ho, A. Debska-Slizien and R. Drangova 31

Studies on the tubular cell outward dopamine transporter in the rat kidney
P. Soares-da-Silvar and M. Pestana 41

Molecular biology of dopamine receptors: An overview
P.A. Jose, R.A. Felder, F.J. Momsma, Jr, D.R. Sibley and M.M. Mouradian 51

Pharmacological studies of dopamine receptors in cultured renal cells
D.P. Healy, T. Huo, V. Bogdanov and A. Grenader 63

Signal transduction in the action of dopamine in rat renal tubules
Takeo Satoh, Herbert T. Cohen and Adrian I. Katz 73

Anatomical localization of dopamine DA_1 receptors in the human kidney: A light microscope autoradiographic study
F. Amenta, A. Ricci, S. Escaf and J.A. Vega 81

Dopamine receptor modulation of neurotransmission in rat and human kidney
L.C. Rump and P. Schollmeyer 91

Effects of dopamine agonists on sympathetic nervous system
J.L. Montastruc, C. Damase-Michel, G. Durrieu, M.A. Tran and P. Montastruc 99

Dopamine receptor stimulation during exercise. Effects on plasma norepinephrine
A.R.J. Girbes, A.G. Lieverse, D.J. Van Veldhuisen, R.G. Grevink and A.J. Smit 113

Role of plasma dopamine for regulation of blood pressure in humans
M. Yoshimura, T. Komori, T. Nakanishi and H. Takahashi 121

A role for intrarenal dopamine in sodium homeostasis in hypertension?
D.F. Schoors and A.G. Dupont 133

Impairment of renal dopamine receptor function in spontaneously hypertensive rats
C. Chen and M.F. Lokhandwala 143

A molecular approach to the study of renal dopamine receptors in hypertension
R.A. Felder, I. Yamaguchi, A. Horiuchi, P.A. Jose and R.M. Carey 155

Endogenous digitalis-like substance and renal dopaminergic system in reduced renal mass hypertensive rat
K. Shimamoto, H. Nakagawa, M. Nakagawa, S. Saitoh and O. Iimura 165

Presence of dopaminergic DA_2 binding sites in pheochromocytoma
R. Lanzilotti, C. Puppili, L. Ianni, G. Fiorelli, R.M. Carey and M. Mannelli 175

Effects of ibopamine on cardiac angiotensin converting enzyme (ACE) activity in different experimental models of chronic heart failure
D.J. van Veldhuisen, W.H. van Gilst, H. Buikema, E. Scholtens, P.A. Greaff, B.J.G.L. Smet, A.R.J. Girbes, K.I. Lie and H. Wesseling 183

Further studies on gludopa in man: The effect of the monoamine oxidase inhibitor selegiline
S. Freestone, T.C. Li Kam and M.R. Lee 195

Dopamine prodrugs in cardiovascular and renal disease
C. Casagrande 203

Abstracts

Renal metabolism of catecholamines in response to increased dietary phosphate intake
G.M. Tyce, T.J. Berndt, A. MacDonald, R. Walikonis, S. Chinnow, T.P. Dousa and F.G. Knox 217

Effect of changes in dietary phosphate intake on urinary dopamine excretion
T.J. Berndt, J. Isaac, T.P. Dousa, G.M. Tyce and F.G. Knox 218

Is dopamine an intrarenal hormone? Re-examination of the question based on *in vitro* studies with renal epithelial cells
Dennis P. Healy and Arcady Grenader 219

Dopamine production in human and rat isolated renal tubular epithelial cells
J.T. Guimarães and P. Soares-da-Silva 220

Peripheral dopamine, its precursors and metabolites in human aging
O. Kuchel 221

Ontogeny of the renal tubular dopamine synthetising and cellular transport systems in dog
P. Soares-da-Silva, M.H. Fernandes, M. Pestana, M.A. Vieira-Coelho and J.T. Guimarães 222

Quantitative difference of regional dopamine generation from 3,4-dihydroxyphenylalanine (DOPA) in the peripheral tissues
S. Shigetomi, K. Tanaka, J.-C. Kim and S. Fukuchi 223

Preferential decarboxylation of L-*threo*-DOPS in renal tissues
P. Soares-da-Silva 224

Evaluation of the dopamine synthetising systems in the rat digestive tract
M.A. Vieira-Coelho and P. Soares-da Silva 225

Renal outflow of dopamine: A comparative study in human and rat renal tissues
M. Pestana and P. Soares-da-Silva 226

Dopamine effects in Dahl salt-sensitive rats
A. Aperia, A. Nishi, A.M. Bertorello, A.C. Eklöf and G. Celsi 227

Dopamine receptor blockade and synthesis inhibition during exaggerated natriuresis in spontaneously hypertensive rats
P. Hansell and M. Sjöquist 228

Pharmacological characterization of dopamine D_1 receptor binding sites in human circulation mononuclear cells
F. Veglio, G. Pinna, A. Ricci, M. Ruffa, D. Schiavone and F. Amenta 229

Autoradiographic localization of [^{3}H]-Dopexamine in the human heart
P. Napoleone, A. Ricci and F. Amenta 230

Dopamine D_1 receptor sites in the human umbilical artery of normotensive and pre-eclamptic subjects: A radioligand binding and autoradiographic study
J.A. Ferreira de Almeida, A. Ricci, L. Pereira Leite and F. Amenta 231

Loss of dopamine D_2 receptors in the denervated rat kidney
A. Rossodivita, M.H. Fernandes, A. Ricci, P. Soares-da-Silva and F. Amenta 232

Effects of long term L-DOPA treatment on diabetic nephropathy in the rat
P. Mayer, M. Barthelmebs, C. Fontain, D. Stephan, M. Grima and J.L. Imbs 233

Hormonal responses during insulin-mediated antinatriuresis in essential hypertension
P. Coruzzi, A. Biggi, R. Ceriati, G. Mossini, M. Carra, L. Musiari, E. Bergamashi and A. Novarini 234

Dopamine released from nerve endings activates presynaptic dopamine receptors in the human uterine artery
T.R.A. Macedo, M.T. Morgadinho and C.A. Fontes Ribeiro 235

Carrier-mediated efflux of [^{3}H]-Dopamine from the cat carotid body
M. Pokorski, J. Albrecht and I. Fresko 236

Involvement of renal dopaminergic system in the control of vasoactive mediator release: Evidence for a functional D_2 receptor
G. Durrieu, C. Damase-Michel, M.A. Tran, G. Bompart, G. Tavernier, J.L. Montastruc and J.P. Girolami 237

Role of dopamine 1 and dopamine 2 receptors in the regulation of sodium excretion
Ann-Christine Eklöf, Shanlin Chen and Anita Aperia 238

Characterization of the hypertensive profile in the nitric oxide-deprived rat: Prevention by L-arginine and reversibility by isosorbide 5-mononitrate
A. Albino-Teixeira and P. Soares-da-Silva 239

Renal formation and cellular transport of dopamine in the nitric oxide-deprived hypertensive rat
P. Soares-da-Silva, M.H. Fernandes, M. Pestana, M.A. Vieira-Coelho and A. Albino-Teixeira 240

Renal dopamine excretion and vasodilatation in the spontaneously hypertensive rats (SHR)
M. Barthelmebs, C. Fontain, M. Grima, D. Stephan and J.L. Imbs 241

Antihypertensive effect of TA-870, a novel dopamine prodrug, in spontaneously hypertensive rat
K. Tanaka, S. Shigetomi and S. Fukuchi 242

FPL 65447AA: A selective D_1 receptor agonist
G.W. Smith, M.I. Christie, F. Ince, A.K. Nicol, B. Springthorpe, G.E. Williams and A. Verity 243

Abbott-68930: An orally active D_1 agonist in conscious dog
M.I. Christie and G.W. Smith 244

Effect of epinine on systemic hemodynamics and regional blood flows in conscious pigs
L.J. van Workens, A.J. Man in't Veld, W.J. van der Giessen, F. Boomsma and P.D. Verdouw 245

Renal effects of dopamine, dobutamine and dopexamine: Significance of dopaminergic stimulation during similar increases in cardiac output
N.V. Olsen, J. Lund, P.F. Jensen, K. Espersen and I.L. Kanstrup 246

Increase in plasma dopamine by contaminated tyramine
A.H. vd Meiracker, F. Boomsma, A.J. Man in't Veld, M.A.D.H. Schalekamp 247

Differential cardiovascular and neuroendocrine effects of epinine and dopamine in conscious pigs before and after adrenoceptor blockade
L.J. van Workens, A.J. Man in't Veld, W.J. van der Giessen, F. Boomsma and P.D. Verdouw 248

Metabolism and pharmacology of dopamine prodrug docarpamine (TA 870)
S. Nishiyama, M. Yoshikawa and I. Yamaguchi 249

Rapid break-down of dopamine in pig plasma
F. Boomsma, A.J. Man in't Veld, P.D. Verdouw and M.A.D.H. Schalekamp 250

Pharmacokinetics and -dynamics of ibopamine in autonomic failure
A.H. vd Meiracker, F. Boomsma, W. Rensma, A.J. Man in't Veld and M.A.D.H. Schalekamp 251

Author Index 253

Subject Index 257